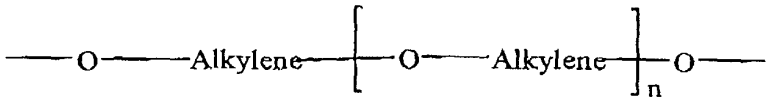
We claim:

1. A cross-linked polysaccharide, said cross-linked polysaccharide being a polysaccharide cross-linked by an ether linkage consisting of a backbone chain of atoms, said backbone chain of atoms consisting of two terminal ether oxygen atoms, one or more intermediate oxygen link atoms and two or more $-CH_2-$ link groups, each intermediate oxygen link atom being an ether oxygen atom.

2. A cross-linked polysaccharide as defined in claim 1 wherein said backbone chain of atoms comprises at least one -O-Alkylene- group, wherein Alkylene comprises from 1 to 5 $-CH_2-$ groups.

3. A cross-linked polysaccharide as defined in claim 1 wherein said backbone chain of atoms comprises at least one $-O-CH_2-CH_2-$ group.

4. A cross-linked polysaccharide, said cross-linked polysaccharide being a polysaccharide cross-linked by an ether linkage consisting of a backbone chain of atoms, said backbone chain of atoms having the formula 2



2

wherein each Alkylene consists of one or more $-CH_2-$ groups , wherein the two terminal oxygen atoms are ether oxygen atoms, and n is an integer of from 1 to 100.

5. A cross-linked polysaccharide as defined in claim 4 wherein n is 1, 2 or 3.

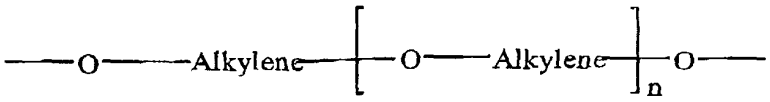
6. A cross-linked polysaccharide as defined in claim 4 wherein each Alkylene consists of from 1 to 5 $-CH_2-$ groups.

7. A cross-linked polysaccharide as defined in claim 6 wherein each Alkylene is a $-CH_2-CH_2-$ group.

8. A cross-linked polysaccharide as defined in claim 7 wherein n is 1, 2 or 3.

9. A cross-linked polysaccharide as defined in claim 4 wherein said backbone chain of atoms is a group of formula $-O-CH_2-CH_2-O-CH_2-CH_2-O-$.

10. A process for the preparation of a cross-linked polysaccharide , said cross-linked polysaccharide being a polysaccharide cross-linked by an ether linkage consisting of a backbone chain of atoms of formula 2

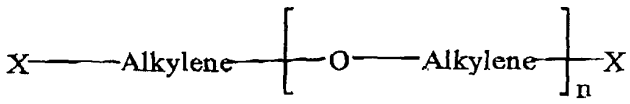


2

wherein each Alkylene consists of one or more $-CH_2-$ groups,

wherein the two terminal oxygen atoms are ethere oxygen atoms,

and n is an integer of 1 to 1000, said process comprising the step of contacting a polysaccharide with at least one cross-linking agent selected in the group consisting of activated polyalkylene glycols of formula 2a



2a

so as to obtain said cross-linked polysaccharide,

wherein each Alkylene is as defined above,

each X group is a group able to react with an alcohol hydroxyl group of said polysaccharide so as to provide an ether oxygen atom link and

n is as defined above.

11. A process as defined in claim 10 wherein n is an integer of from 1 to 100.

12. A process as defined in claim 10 wherein each Alkylene consists of from 1 to 5 $-CH_2-$ groups.

13. A process as defined in claim 12 wherein each Alkylene is a $-CH_2-CH_2-$ group.

14. A process as defined in claim 12 wherein n is an integer of from 1 to 100.

15. A process as defined in claim 12 wherein n is 1, 2 or 3.

16. A process as defined in claim 15 wherein each Alkylene is a $-CH_2-CH_2-$ group.

17. A process as defined in claim 10 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2-$ and Tf is CF_3SO_2-.

18. A process as defined in claim 12 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2-$ and Tf is CF_3SO_2-.

19. A process as defined in claim 15 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2-$ and Tf is CF_3SO_2-.

20. A process as defined in claim 19 wherein n is 1, each Alkylene is a $-CH_2-CH_2-$ and the cross-linking agent comprises 1,5-dichloro-3-oxopentane.

21. A process as defined in claim 19 wherein n is 2, each Alkylene is a $-CH_2-CH_2-$ and the cross-linking agent comprises 1,8-dichloro-3,6-dioxooctane.

22. A process as defined in claim 19 wherein n is 3, each Alkylene is a $-CH_2-CH_2-$ and the cross-linking agent comprises 1,11-dichoro-3,6,9-trioxoundecane.

23. A process as de[redacted] in claim 10 wherein said cross-linl[redacted] agent has an average molecular weight of 10,000 or less.

24. A process as defined in claim 10 wherein said cross-linking agent has an average molecular weight of 300 or less.

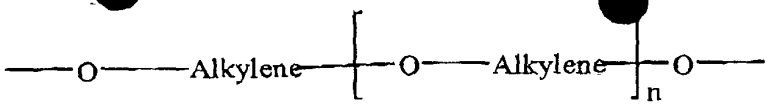
25. A process as defined in claim 23 wherein n is 1, 2 or 3.

26. A cross-linked starch, said cross-linked starch being a starch cross-linked by an ether linkage consisting of a backbone chain of atoms, said backbone chain of atoms consisting of two terminal ether oxygen atoms, one or more intermediate oxygen link atoms and two or more $-CH_2-$ link groups, each intermediate oxygen link atom being an ether oxygen atom.

27. A cross-linked starch as defined in claim 26 wherein said backbone chain of atoms comprises at least one -O-Alkylene- group, wherein Alkylene comprises from 1 to 5 $-CH_2-$ groups.

28. A cross-linked starch as defined in claim 26 wherein said backbone chain of atoms comprises at least one $-O-CH_2-CH_2-$ group.

29 A cross-linked starch, said cross-linked starch being a starch cross-linked by an ether linkage consisting of a backbone chain of atoms, said backbone chain of atoms having the formula 2



2

wherein each Alkylene consists of one or more -CH_2- groups , wherein the two terminal oxygen atoms are ether oxygen atoms, and n is an integer of from 1 to 100.

30. A cross-linked starch as defined in claim 29 wherein n is 1, 2 or 3.

31. A cross-linked starch as defined in claim 29 wherein each Alkylene consists of from 1 to 5 -CH_2- groups.

32. A cross-linked starch as defined in claim 31 wherein each Alkylene is a -CH_2-CH_2- group.

33. A cross-linked starch as defined in claim 32 wherein n is 1, 2 or 3.

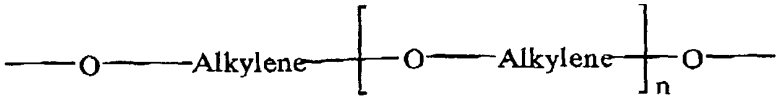
34. A cross-linked starch as defined in claim 29 wherein said backbone chain of atoms is a group of formula -O-CH_2-CH_2-O-CH_2-CH_2-O-.

35. A cross-linked starch as defined in claim 29 wherein the starch is an anionic starch.

36 A cross-linked starch as defined in claim 29 wherein the starch is a carboxyalkyl starch wherein the alkyl moiety comprises from 1 to 3 carbon atoms.

37. A cross-linked starch as defined in claim 29 wherein the starch is a carboxymethyl starch.

38. A process for the preparation of a cross-linked starch , said cross-linked starch being a starch cross-linked by an ether linkage consisting of a backbone chain of atoms of formula 2

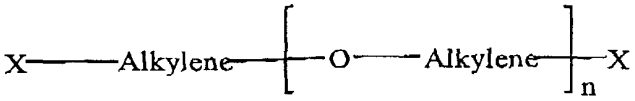


2

wherein each Alkylene consists of one or more -CH_2- groups,

wherein the two terminal oxygen atoms are ether oxygen atoms,

and n is an integer of from 1 to 1000, said process comprising the step of contacting a starch with at least one cross-linking agent selected in the group consisting of activated polyalkylene glycols of formula 2a



2a

so as to obtain said cross-linked starch,

wherein each Alkylene is as defined above,

each X group is a group able to react with an alcohol hydroxyl group of said starch

so as to provide an ether oxygen atom link and

n is as defined above.

39. A process as defined in claim 38 wherein n is an integer of from 1 to 100.

40. A process as defined in claim 38 wherein each Alkylene consists of from 1 to 5 $-CH_2-$ groups.

41. A process as defined in claim 40 wherein each Alkylene is a $-CH_2-CH_2-$ group.

42. A process as defined in claim 40 wherein n is an integer of from 1 to 100.

43. A process as defined in claim 40 wherein n is 1, 2 or 3.

44. A process as defined in claim 43 wherein each Alkylene is a $-CH_2-CH_2-$ group.

45. A process as defined in claim 38 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2-$ and Tf is CF_3SO_2-.

46. A process as defined in claim 41 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2-$ and Tf is CF_3SO_2-.

47. A process as defined in claim 43 wherein each X is selected from the group consisting of Cl, Br, I, -O-Ms, -O-Ts, and -O-Tf, wherein Ms is CH_3SO_2-, Ts is *p*-$CH_3C_6H_4SO_2$- and Tf is CF_3SO_2-.

48. A process as defined in claim 47 wherein n is 1, each Alkylene is a -CH_2-CH_2- and the cross-linking agent comprises 1,5-dichloro-3-oxopentane.

49. A process as defined in claim 47 wherein n is 2, each Alkylene is a -CH_2-CH_2- and the cross-linking agent comprises 1,8-dichloro-3,6-dioxooctane.

50. A process as defined in claim 47 wherein n is 3, each Alkylene is a -CH_2-CH_2- and the cross-linking agent comprises 1,11-dichoro-3,6,9-trioxoundecane.

51. A process as defined in claim 38 wherein said cross-linking agent has an average molecular weight of 10,000 or less.

52. A process as defined in claim 38 wherein said cross-linking agent has an average molecular weight of 300 or less.

53. A process as defined in claim 38 wherein the starch is an anionic starch.

54. A process as defined in claim 38 wherein the starch is a carboxyalkyl starch wherein the alkyl moiety comprises from 1 to 3 carbon atoms.

55. A process as defined in claim 38 wherein the starch is a carboxymethyl starch.

56. A process as defined in claim 44 wherein the starch is an anionic starch.

57. A process as defined in claim 44 wherein the starch is a carboxyalkyl starch wherein the alkyl moiety comprises from 1 to 3 carbon atoms.

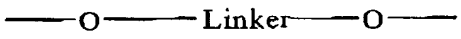
58. A process as defined in claim 44 wherein the starch is a carboxymethyl starch.

59. A process as defined in claim 48 wherein the starch is a carboxymethyl starch.

60. A process as defined in claim 49 wherein the starch is a carboxymethyl starch.

61. A process as defined in claim 50 wherein the starch is a carboxymethyl starch.

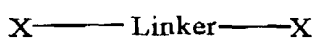
62. A process for the preparation of a cross-linked polysaccharide , said cross-linked polysaccharide being a polysaccharide cross-linked by an ether linkage consisting of a backbone chain of atoms of formula 1



1

wherein said Linker consists of one or more intermediate ether oxygen link atoms and two or more $-CH_2-$ link groups, wherein the two terminal oxygen atoms are ether oxygen atoms, said

process comprising the step of contacting a polysaccharide with at least one cross-linking agent selected in the group consisting of activated polyalkylene glycols of formula 1a



1a

so as to obtain said cross-linked polysaccharide,

wherein said Linker is as defined above, and

each X group is a group able to react with an alcohol hydroxyl group of said polysaccharide so as to provide an ether oxygen atom link.

63. A cross-linked starch as defined in claim 29 wherein the starch is a starch half ester selected from the group consisting of starch maleate half ester, starch succinate half ester, starch sulfosuccinate half ester, starch citraconate half ester, starch glutarate half ester and starch phthalate half ester.

64. An absorbent personal hygiene product containing a cross-linked polysaccharide as defined in claim 1.

65. An absorbent personal hygiene product as defined in claim 64 wherein the personal hygiene product is selected from the group consisting of baby diapers, incontinence products, sanitary napkins, and tampons.

66. A cross-linked polysaaccharide as defined in claim 1 wherein the polsaccharide is

- a starch [redacted] from the group consisting of strach [redacted] rived from corn, wheat, rice, potato, tapioca, waxy maize, sorghum, sago, and waxy sorghum,

- a modified starches selected from the group cosisiting of dextrinated, hydrolysed, oxidized, alkylated, hydroxyalkylated, acetylated, fractionated starches

- a member selected from the group consisting of cellulose, dextrins, polygalactomannans, ionic and/or non-ionic derivatized, chitin/chitosan, alginate compositions, gums, xanthan gum, carageenan gum, gum karaya, gum arabic, pectin and glass-like polysaccharides;

or - a member selected from the group consisting of anionic and cationic polysaccharides.

67. A cross-linked polysaaccharide as defined in claim 66 wherein the anionic polysaccharides are selected from the group consisting of polysaccharides having groups selected from the group consisting of dicarboxylate and tricarboxylates groups.

68. A cross-linked polysaccharide as defined in claim 66 wherein the anionic polysaccharides are selected from the group consisiting of polysaccharides having groups selected from the group consisting of iminodiacetate groups and citrate groups.

69. The use of a polysaccharide as defined in claim 1 in a food pad; telecommunication cable wrappings (for non-biodegradable polymer); in agricultural and forestry applications to retain water in soil and to release water to the roots of plants; in fire-fighting techniques; bandages and surgical pads; for cleanup of acidic or basic aqueous solutions spills, including water soluble chemicals spills and; as polymeric gels for cosmetics and

pharmaceuticals [redacted]nown as drug delivery systems and s[redacted]release substances and;

for artificial snow.